

August 15, 2022

Mr. Eric Nold  
Enforcement / Fund-Lead Removal Branch  
U.S. Environmental Protection Agency Region VII  
11201 Renner Blvd.  
Lenexa, Kansas 66219

**Re: Sentinel Industries, Ava, Missouri, Monthly Report – July 2022**

Dear Mr. Nold:

July 2022 activities of general maintenance were completed.

The first semi-annual groundwater monitoring event was performed during the month of June 2022, the report of these activities is included with this letter.

There were no media or public inquiries.

Thank you,



Jacob Gallegos, R.G.  
Environmental Manager  
Lafser & Associates, Inc.

cc: Danny Farris, Sentinel Industries, Inc.  
Dr. Mihai Lefticariu, MDNR  
David Shorr, Lathrop & Gage, L.C.

August 15, 2022

Mr. Eric Nold  
Enforcement / Fund-Lead Removal Branch  
U.S. Environmental Protection Agency Region VII  
11201 Renner Blvd.  
Lenexa, Kansas 66219

**Re: Sentinel Industries, Ava, Missouri, Semi-Annual Groundwater and Surface Water Sampling Report and Soil Sampling Results – June 2022**

Dear Mr. Nold:

On June 28 and June 29, 2022, Lafser & Associates, Inc., (L&A) conducted the semi-annual groundwater and surface water sampling event at the site. A total of fifteen (15) groundwater samples were collected from the monitoring wells at the site. Groundwater samples were collected using a peristaltic pump connected to plastic tubing, which is dedicated for each individual well. One (1) duplicate sample was collected for QA/QC purposes from SENGW-16. Depth to water measurements collected during this event ranged from 2.56' feet below top of casing (BTOC) in EMMW25B to 8.46' feet BTOC in SENGW19.

Seven (7) surface water samples were collected in the creek, which flows through the site. Surface water samples were collected beginning at the downstream sample locations to avoid potential cross-contamination. No sheen or odors were noted in the surface water samples. The surface and groundwater data are summarized in the attached figures. Please refer to Table 1 for a summary of the previous 6-years of groundwater and surface water sampling.

No treated water was stored or discharged since the previous event.

During this sampling event, pentachlorophenol was detected in groundwater at concentrations ranging from 0.13 micrograms per liter (ug/L) in SENGW17 to 869 ug/L in SENGW10. The samples collected from SENGW10, SENGW16, and EMMW24B had concentrations exceeding the domestic use threshold of 1.0 ug/L, with concentrations ranging from 1.92 ug/L in EMMW24B to 869 ug/L in SENGW10. No other groundwater samples exceeded the domestic use threshold during this event. Results from this event were similar to those previously observed.

During this sampling event, pentachlorophenol was not detected in any of the (7) surface water samples. No surface water samples exceeded the domestic use threshold during this event.

The next groundwater sampling event is scheduled for November 2022.

Sincerely,



Jacob Gallegos, R.G.  
Environmental Geologist  
Lafser & Associates, Inc.



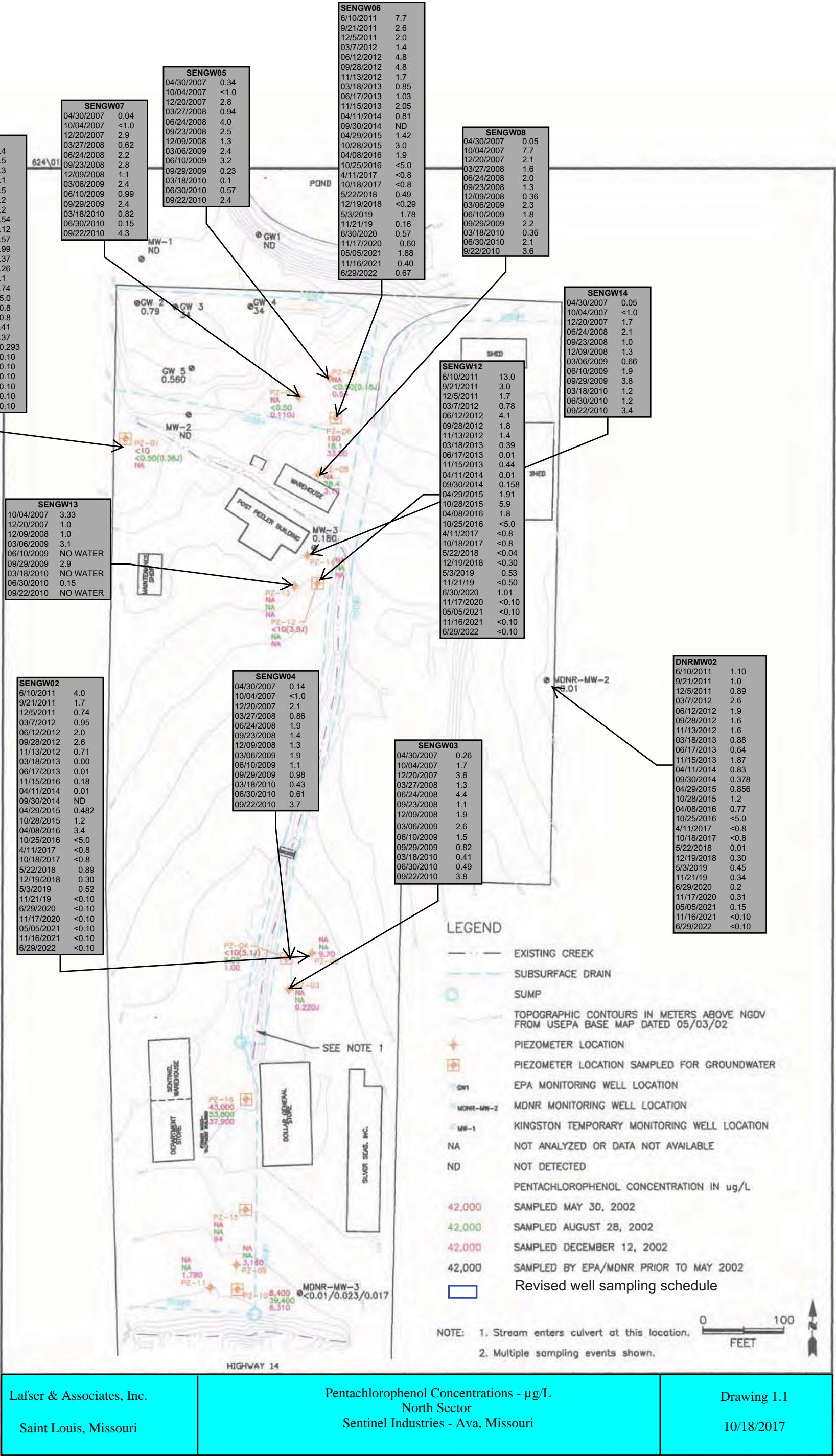
cc: Don Farris, Sentinel Industries, Inc.  
Dr. Mihai Lefticariu, MDNR  
David Shorr, Lathrop & Gage, L.C.

GROUNDWATER AND SURFACE WATER PENTACHLOROPHENOL DATA - PREVIOUS 6-YEARS														
SENTINEL - AVA, MISSOURI														
6/28/2022														
Sample Type	Sample Location	Units	10/24/2016	4/11/2017	10/18/2017	5/22/2018	12/19/2018	5/2/2019	11/21/2019	6/29/2020	11/18/2020	5/5/2021	11/16/2021	6/28/2022
Groundwater	SENGW1	ug/L	5	0.8	0.8	0.41	0.368	0.293	0.1	0.1	0.1	0.1	0.1	0.1
	SENGW2	ug/L	5	0.8	0.8	0.04	0.303	0.52	0.1	0.1	0.1	0.1	0.1	0.1
	SENGW6	ug/L	5	0.8	0.8	0.49	0.0961	1.78	0.16	0.57	0.6	1.88	0.4	0.67
	SENGW10	ug/L	4210	2100	3100	1500	1110	922	1290	597	745	306	1020	869
	SENGW12	ug/L	5	0.8	0.8	0.04	0.0982	0.534	0.5	1.01	0.1	0.1	0.1	0.1
	SENGW15	ug/L	16	6		0.15	4.22	0.954	0.1	0.1	0.26	2.32	4.08	0.39
	SENGW16	ug/L	81	190	210	62	14.5	2840	8.61	0.33	6.23	3.73	290	35.9
	SENGW17	ug/L	20	15	0.8	0.04	6.31	9	0.16	0.1	1.14	0.19	0.1	0.13
	SENGW18	ug/L	5	0.8	0.8	0.04	0.0983	0.294	0.1	0.1	0.1	0.1	0.1	0.1
	SENGW19	ug/L	5	0.8	0.8	0.04	0.0973	0.294	0.1	0.1	0.1	0.1	0.1	0.1
	EMM24B	ug/L	27	40	18	6.6	0.101	36.8	0.61	1.91	6.35	3.69	1.26	1.92
	EMM25B	ug/L	5	2.5	29	0.61	0.572	5.74	0.21	0.1	6.44	2.94	1.62	0.1
	EMM26B	ug/L	5	0.8	0.8	0.04	0.0971	0.446	0.1	0.1	0.1	0.1	0.1	0.1
	DNRMW02	ug/L	5	0.8	0.8	0.096	0.298	0.445	0.34	0.2	0.31	0.15	0.1	0.1
	DNRMW03	ug/L	5	0.8	0.8	0.05	0.0997	0.292	0.1	0.1	0.1	0.1	0.1	0.1
Surface Water	SENSW02	ug/L	5	0.8	0.8	0.04	0.0946	0.286	0.1	0.1	0.1	0.1	0.11	0.1
	SENSW03	ug/L	5	0.8	0.8	0.13	0.311	0.501	0.1	0.51	0.16	0.11	0.12	0.1
	PIPE OULET	ug/L	5	0.8	0.8	5.3	0.712	0.572	0.68	0.15	0.91	1.23	0.21	0.1
	SENSW04	ug/L	18	7.1	4.1	3.7	1.49	1.95	0.42	0.26	0.64	1.2	0.17	0.1
	DNRSW09	ug/L	5	4.4	0.8	2.5	1.52	1.1	0.59	0.23	0.34	0.98	0.19	0.1
	SENSW05	ug/L	5	0.8	0.8	0.55	0.326	0.659	0.13	0.04	0.1	0.34	0.1	0.1
	SENSW06	ug/L	5	0.8	0.8	0.27	0.289	0.648	0.1	0.1	0.1	0.16	0.1	0.1

ug/L

micrograms per Liter

Concentration exceeds domestic use threshold of 1.0 ug/L



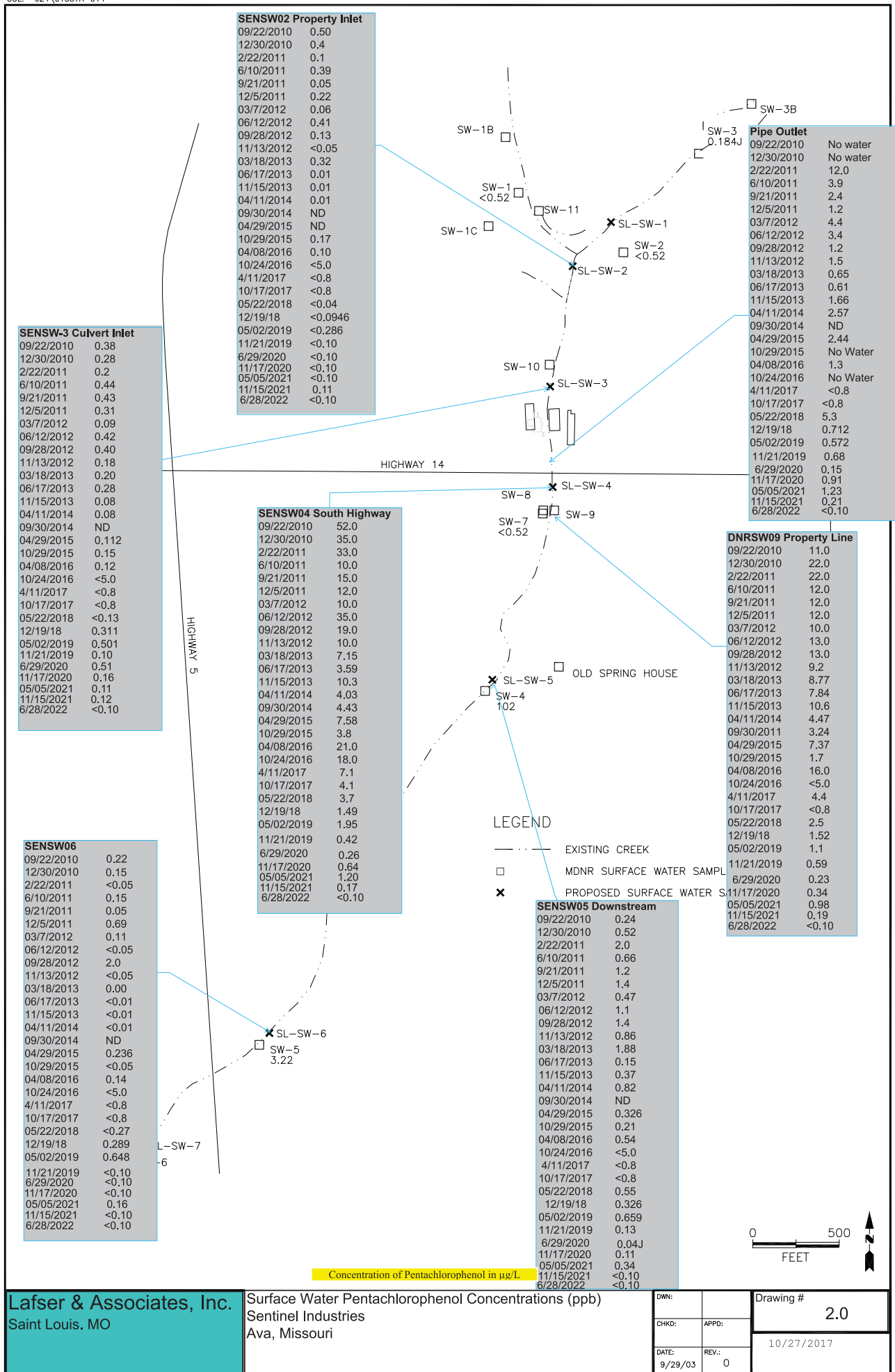
Lafser & Associates, Inc.  
Saint Louis, Missouri

Pentachlorophenol Concentrations - µg/L  
North Sector  
Sentinel Industries - Ava, Missouri

Drawing 1.1  
10/18/2017







Lafser & Associates, Inc.  
Saint Louis, MO

Surface Water Pentachlorophenol Concentrations (ppb)  
Sentinel Industries  
Ava, Missouri

DWN:		Drawing #
CHKD:	APPD:	2.0
DATE:	REV.:	10/27/2017
9/29/03	0	

## **Attachment A**

### **Groundwater and Surface Water Analytical Data**



July 15, 2022

Jacob Gallegos  
Lafser & Associates  
1000 S. Newstead  
St. Louis, MO 63110  
TEL: (314) 878-4021  
FAX: (314) 878-4442



Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

**RE:** Ave, MO

**WorkOrder:** 22070061

Dear Jacob Gallegos:

TEKLAB, INC received 23 samples on 7/1/2022 14:30:00 for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Aaron Renner  
Project Manager  
(630)324-6855  
[arenner@teklabinc.com](mailto:arenner@teklabinc.com)



## Report Contents

<http://www.teklabinc.com/>

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**This reporting package includes the following:**

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Quality Control Results	30
Receiving Check List	31
Chain of Custody	Appended

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Abbr Definition**

\* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.

IDPH IL Dept. of Public Health

LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.

LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.

MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).

MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MW Molecular weight

NC Data is not acceptable for compliance purposes

ND Not Detected at the Reporting Limit

NELAP NELAP Accredited

PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.

RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.

RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).

SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.

Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count ( > 200 CFU )

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

### Qualifiers

- |   |  |
|---|--|
| # - Unknown hydrocarbon                               | B - Analyte detected in associated Method Blank              |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range                           |
| H - Holding times exceeded                            | I - Associated internal standard was outside method criteria |
| J - Analyte detected below quantitation limits        | M - Manual Integration used to determine area response       |
| ND - Not Detected at the Reporting Limit              | R - RPD outside accepted recovery limits                     |
| S - Spike Recovery outside recovery limits            | T - TIC(Tentatively identified compound)                     |
| X - Value exceeds Maximum Contaminant Level           |  |



## Case Narrative

<http://www.teklabinc.com/>

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**Cooler Receipt Temp:** 3.4 °C

### Locations

#### Collinsville

**Address** 5445 Horseshoe Lake Road  
Collinsville, IL 62234-7425  
**Phone** (618) 344-1004  
**Fax** (618) 344-1005  
**Email** jhriley@teklabinc.com

#### Collinsville Air

**Address** 5445 Horseshoe Lake Road  
Collinsville, IL 62234-7425  
**Phone** (618) 344-1004  
**Fax** (618) 344-1005  
**Email** EHurley@teklabinc.com

#### Springfield

**Address** 3920 Pintail Dr  
Springfield, IL 62711-9415  
**Phone** (217) 698-1004  
**Fax** (217) 698-1005  
**Email** KKlostermann@teklabinc.com

#### Chicago

**Address** 1319 Butterfield Rd.  
Downers Grove, IL 60515  
**Phone** (630) 324-6855  
**Fax**  
**Email** arenner@teklabinc.com

#### Kansas City

**Address** 8421 Nieman Road  
Lenexa, KS 66214  
**Phone** (913) 541-1998  
**Fax** (913) 541-1998  
**Email** jhriley@teklabinc.com



**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2023	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-001**Client Sample ID:** SEN SW 06**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 09:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 05:40	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>73.8</b>	%REC	1	07/09/2022 05:40	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-002**Client Sample ID:** SEN SW 05**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 09:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 06:05	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>82.6</b>	%REC	1	07/09/2022 06:05	194219

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**Lab ID:** 22070061-003

**Client Sample ID:** DNR SW 09

**Matrix:** GROUNDWATER

**Collection Date:** 06/28/2022 09:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 06:31	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>116.7</b>	%REC	1	07/09/2022 06:31	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-004**Client Sample ID:** SEN SW 04**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 09:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 06:57	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>116.6</b>	%REC	1	07/09/2022 06:57	194219





## Laboratory Results

<http://www.teklabinc.com/>

Client: Lafser & Associates

Work Order: 22070061

Client Project: Ave, MO

Report Date: 15-Jul-22

Lab ID: 22070061-005

Client Sample ID: Pipe Outlet

Matrix: GROUNDWATER

Collection Date: 06/28/2022 10:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		ND	µg/L	1	07/09/2022 07:22	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136	S	157.9	%REC	1	07/09/2022 07:22	194219
<i>Surrogate recovery is outside control limits due to matrix interference.</i>								



## Laboratory Results

<http://www.teklabinc.com/>

Client: Lafser & Associates

Work Order: 22070061

Client Project: Ave, MO

Report Date: 15-Jul-22

Lab ID: 22070061-006

Client Sample ID: SEN SW 03

Matrix: GROUNDWATER

Collection Date: 06/28/2022 10:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		ND	µg/L	1	07/09/2022 08:39	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136	S	179.6	%REC	1	07/09/2022 08:39	194219
<i>Surrogate recovery is outside control limits due to matrix interference.</i>								

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-007**Client Sample ID:** SEN SW 02**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 09:04	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>81.7</b>	%REC	1	07/09/2022 09:04	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-008**Client Sample ID:** SEN GW 12**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 11:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 09:30	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>88.4</b>	%REC	1	07/09/2022 09:30	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-009**Client Sample ID:** SEN GW 01**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 12:47

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 09:56	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>71.3</b>	%REC	1	07/09/2022 09:56	194219



**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-010**Client Sample ID:** SEN GW 06**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>0.67</b>	µg/L	1	07/09/2022 10:21	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>117.7</b>	%REC	1	07/09/2022 10:21	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-011**Client Sample ID:** DNR MW 02**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 15:14

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 10:47	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>80.5</b>	%REC	1	07/09/2022 10:47	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-012**Client Sample ID:** SEN GW 02**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 11:12	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>95.6</b>	%REC	1	07/09/2022 11:12	194219

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**Lab ID:** 22070061-013

**Client Sample ID:** DNR MW 03

**Matrix:** GROUNDWATER

**Collection Date:** 06/28/2022 16:47

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/09/2022 11:38	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>95.5</b>	%REC	1	07/09/2022 11:38	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-014**Client Sample ID:** SEN GW 18**Matrix:** GROUNDWATER**Collection Date:** 06/28/2022 17:57

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/12/2022 15:30	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>76.6</b>	%REC	1	07/12/2022 15:30	194219



**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-015**Client Sample ID:** SEN GW 19**Matrix:** GROUNDWATER**Collection Date:** 06/29/2022 09:44

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/12/2022 15:56	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>76.5</b>	%REC	1	07/12/2022 15:56	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-016**Client Sample ID:** EM MW 26B**Matrix:** GROUNDWATER**Collection Date:** 06/29/2022 10:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/12/2022 16:21	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>76.8</b>	%REC	1	07/12/2022 16:21	194219

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-017**Client Sample ID:** EM MW 25B**Matrix:** GROUNDWATER**Collection Date:** 06/29/2022 10:58

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>ND</b>	µg/L	1	07/14/2022 16:34	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>119.6</b>	%REC	1	07/14/2022 16:34	194219

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**Lab ID:** 22070061-018

**Client Sample ID:** EM MW 24B

**Matrix:** GROUNDWATER

**Collection Date:** 06/29/2022 11:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.50		<b>1.92</b>	µg/L	5	07/14/2022 17:25	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>126.4</b>	%REC	5	07/14/2022 17:25	194219

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**Lab ID:** 22070061-019

**Client Sample ID:** SEN GW 17

**Matrix:** GROUNDWATER

**Collection Date:** 06/29/2022 12:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>0.13</b>	µg/L	1	07/14/2022 16:59	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136		<b>103.9</b>	%REC	1	07/14/2022 16:59	194219
<i>Pentachlorophenol exhibited a greater than 40% RPD between columns due to matrix interference. The lower result is reported.</i>								

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-020**Client Sample ID:** SEN GW 16**Matrix:** GROUNDWATER**Collection Date:** 06/29/2022 13:29

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	10.0		<b>33.6</b>	µg/L	100	07/13/2022 11:04	194219
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136	S	<b>0</b>	%REC	100	07/13/2022 11:04	194219
<i>Surrogate recovery is outside control limits due to sample dilution.</i>								

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-021**Client Sample ID:** SEN GW 16D**Matrix:** GROUNDWATER**Collection Date:** 06/29/2022 13:29

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	10.0		<b>35.9</b>	µg/L	100	07/13/2022 11:30	194250
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136	S	<b>0</b>	%REC	100	07/13/2022 11:30	194250
<i>Surrogate recovery is outside control limits due to sample dilution.</i>								



**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-022**Client Sample ID:** SEN GW 15**Matrix:** GROUNDWATER**Collection Date:** 06/29/2022 13:57

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	0.10		<b>0.39</b>	µg/L	1	07/12/2022 19:48	194250
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136	S	<b>0</b>	%REC	1	07/12/2022 19:48	194250
<i>Surrogate recovery is outside control limits due to matrix interference.</i>								

**Client:** Lafser & Associates**Work Order:** 22070061**Client Project:** Ave, MO**Report Date:** 15-Jul-22**Lab ID:** 22070061-023**Client Sample ID:** SEN GW 10**Matrix:** GROUNDWATER**Collection Date:** 06/29/2022 14:37

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
<b>SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD</b>								
Pentachlorophenol	NELAP	50.0		<b>869</b>	µg/L	500	07/13/2022 13:13	194250
Surr: 2,4-Dichlorophenylacetic acid	*	18.4-136	S	<b>0</b>	%REC	500	07/13/2022 13:13	194250
<i>Surrogate recovery is outside control limits due to sample dilution.</i>								

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**SW-846 3510C, 8151A, CHLORINATED HERBICIDES BY GC/ECD**

Batch 194219		SampType: MBLK		Units µg/L							
SampID: MBLK-194219											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Pentachlorophenol			0.10		ND						07/09/2022
Surr: 2,4-Dichlorophenylacetic acid		*			0.64	0.8000		79.8	46	112	07/09/2022

Batch 194219		SampType: LCS		Units µg/L							
SampID: LCS-194219											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Pentachlorophenol		0.10		0.64	0.8000	0	79.4	49.6	114	07/09/2022	
Surr: 2,4-Dichlorophenylacetic acid	*			0.65	0.8000		81.3	46	112	07/09/2022	

Batch 194219		SampType: LCSD		Units µg/L						RPD Limit 30	
SampID: LCSD-194219											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Pentachlorophenol		0.10		0.73	0.8000	0	91.3	0.6353	13.96	07/09/2022	
Surr: 2,4-Dichlorophenylacetic acid	*			0.76	0.8000		94.5			07/09/2022	

Batch 194250		SampType: MBLK		Units µg/L							
SampID: MBLK-194250											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Pentachlorophenol		0.10		ND						07/12/2022	
Surr: 2,4-Dichlorophenylacetic acid	*			1.60	1.600		100.0	46	112	07/12/2022	

Batch 194250		SampType: LCS		Units µg/L						
SampID: LCS-194250										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Pentachlorophenol		0.10		0.57	0.8000	0	71.2	49.6	114	07/12/2022
Surr: 2,4-Dichlorophenylacetic acid	*			0.56	0.8000		69.5	46	112	07/12/2022

Batch 194250		SampType: LCSD		Units µg/L					RPD Limit 30		
SampID: LCSD-194250											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Pentachlorophenol		0.10		0.62	0.8000	0	77.1	0.5696	7.99	07/12/2022	
Surr: 2,4-Dichlorophenylacetic acid	*			0.64	0.8000		80.0			07/12/2022	

**Client:** Lafser & Associates

**Work Order:** 22070061

**Client Project:** Ave, MO

**Report Date:** 15-Jul-22

**Carrier:** Paul Anderson

**Received By:** PWR

**Completed by:**

**On:**

01-Jul-22

Payton Yoch

**Reviewed by:**

**On:**

01-Jul-22

Elizabeth A. Hurley

**Pages to follow:**

Chain of custody

3

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C **3.4**

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☐

Lab ☐

NA ☒

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

*When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.*

Water – at least one vial per sample has zero headspace?

Yes ☐

No ☐

No VOA vials ☒

Water - TOX containers have zero headspace?

Yes ☐

No ☐

No TOX containers ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

NA ☐

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

**Any No responses must be detailed below or on the COC.**

pg. 1 of 3 Work order # 23070060

<b>Client:</b>	Lafser & Associates		
<b>Address:</b>	1000 S. Newstead Ave, Suite 2		
<b>City / State / Zip</b>	St. Louis, MO 63110		
<b>Contact:</b>	Jacob Gallegos	<b>Phone:</b>	(314) 878-4021
<b>E-Mail:</b>	jgallegos@lafser.com	<b>Fax:</b>	

**Client Comments:**

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☒ Yes ☐ No

MRBCA

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See [www.teklabinc.com](http://www.teklabinc.com) for terms and conditions.

BottleOrder: 73559



# CHAIN OF CUSTODY

pg. 2 of 2 Work order # 25070001

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client: Lafser & Associates  
 Address: 1000 S. Newstead Ave, Suite 2  
 City / State / Zip: St. Louis, MO 63110  
 Contact: Jacob Gallegos Phone: (314) 878-4021  
 E-Mail: jgallegos@lafser.com Fax:

Samples on: ☒ ICE ☒ BLUE ICE ☒ NO ICE °C LTG#  
 Preserved in: ☒ LAB ☒ FIELD **FOR LAB USE ONLY**  
 Lab Notes

Client Comments:

MRBCA

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No  
 Are these samples known to be hazardous? ☐ Yes ☒ No  
 Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☒ Yes ☐ No

Project Name/Number		Sample Collector's Name		MATRIX		INDICATE ANALYSIS REQUESTED																					
Ava, MO		Paul Anderson																									
Results Requested		Billing Instructions		# and Type of Containers										Aqueous		Drinking Water		Soil		Sludge		Special Waste		Groundwater		Pentachlorophenol	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 1-2 Day (100% Surcharge) <input type="checkbox"/> Other <input type="checkbox"/> 3 Day (50% Surcharge)				UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER																
Lab Use Only	Sample Identification	Date/Time Sampled																									
011	DNR MW 02	6/28/2022 1514	1																								
012	SEN GW 02	1600	1																								
013	DNR MW 03	1647	1																								
014	SEN GW 18	1757	1																								
015	SEN GW 19	6/29/2022 0944	1																								
016	EM MW 26 B	1025	1																								
017	EM MW 25 B	1058	1																								
018	EM MW 24 B	1139	1																								
019	SEN GW 17	1225	1																								
020	SEN GW 16	1329	1																								

Relinquished By	Date/Time	Received By	Date/Time
Paul Anderson	7/01/2022 1430	[Signature]	7/1/22 1430

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See [www.teklabinc.com](http://www.teklabinc.com) for terms and conditions.

BottleOrder: 73559



pg. 3 of 3 Work order # 22070061

<b>Client:</b>	Lafser & Associates		
<b>Address:</b>	1000 S. Newstead Ave, Suite 2		
<b>City / State / Zip</b>	St. Louis, MO 63110		
<b>Contact:</b>	Jacob Gallegos	<b>Phone:</b>	(314) 878-4021
<b>E-Mail:</b>	jgallegos@lafser.com	<b>Fax:</b>	

## Lab Notes

MRBCA

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☒ Yes ☐ No

[illegible]

BottleOrder: 73559

